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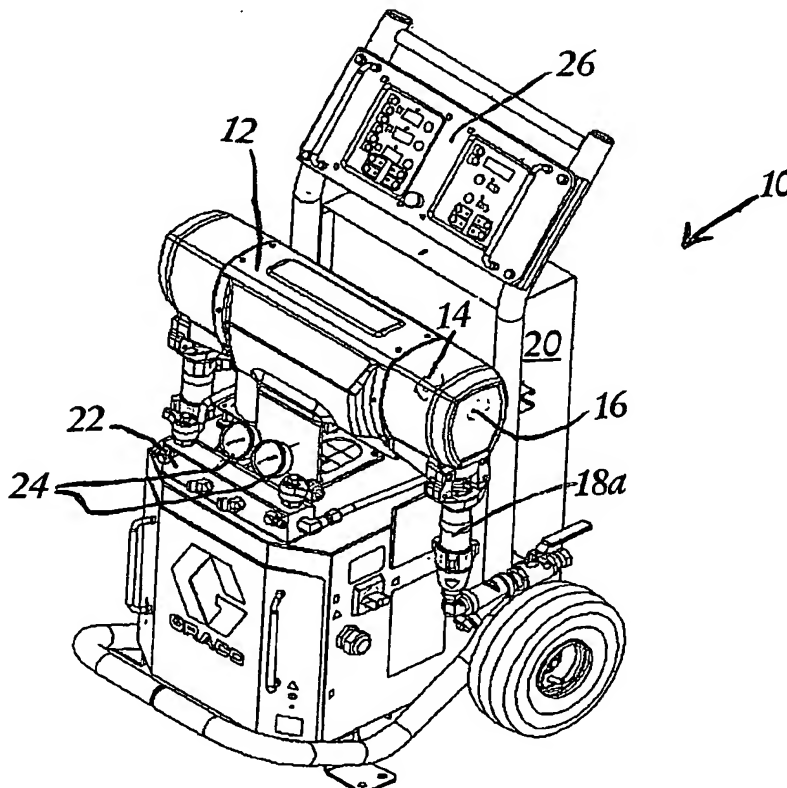
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(54) Title: FAST SET MATERIAL PROPORTIONER



(57) Abstract: The proportioner (10) has a variable speed controlled DC motor (12) having a gearbox (14) and crankshaft (16) at either end which are connected to reciprocating piston pumps (18). The outputs (18a) of the two pumps (18) are fed to a manifold (22) where the pressure of each output is measured. The user sets a setpoint pressure (e.g. 1000 psi) and the controller (26) then compares the pressures of the two components and controls the higher of the two relative to the setpoint. Ratio assurance is monitored by continuing to look at both output pressures. If one side falls below a predetermined percentage of the setpoint (50% in the preferred embodiment), an alarm may be raised or operation stopped.



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European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,
ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO,
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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER

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B. FIELDS SEARCHED

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|--|-----------------------|
| X | US 5,992,686 A (CLINE et al.) 30 November 1999 (30.11.1999), see entire document. | 1, 2 |
| A | US 5,271,521 A (NOSS et al.) 21 December 1993 (21.12.1993), see entire document. | 1, 2 |
| A | US 5,332,125 A (SCHMITKONS et al.) 26 July 1994 (26.07.1994), see entire document. | 1, 2 |
| A | US 6,094,142 A (LU) 25 July 2000 (25.07.2000), see entire document. | 1, 2 |

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☐ See patent family annex.

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